

Mount Diablo Astronomical Society

Diablo Moon Watch

October 2011

GENERAL MEETING

Tuesday October 25, 2011

We Are Amplified Quantum Fluctuations:

The Story of The Creation of All Structures in The Universe

By Professor Lloyd Knox

Doors open at 6:45 p.m.

*Concord Police Association Facility
5060 Avila Road, Concord*



Although many details remain to be worked out, over the last two decades cosmologists have put together the basic framework of the story of the creation of the Universe as we know it today.

The Universe used to be highly homogeneous. For example, one region would have just 0.001% more mass in it than another

region of the same volume. Under the action of gravity, these tiny differences in density grew to become very large differences, giving rise to the diversity of structures we see today. Without these early differences in density, what we might call the seeds of creation, galaxies, stars, planets, and we ourselves would not exist. Our best guess as to the origin of these seeds is in quantum fluctuations in the earliest instants of the big bang, during a period of accelerating expansion. In this talk, I will expand upon this story and present the evidence that supports it.

Please come Tuesday October 25 to listen to Professor Knox, a cosmologist and Professor of Physics at the University of California Davis. He is the

author of over 70 publications in his field, founder of The Spherical Cow Company, and has been known to sing about Dark Energy

<http://www.youtube.com/watch?v=HF1LUQjd10w>

Video of his most recent presentations for the general public can be found online at

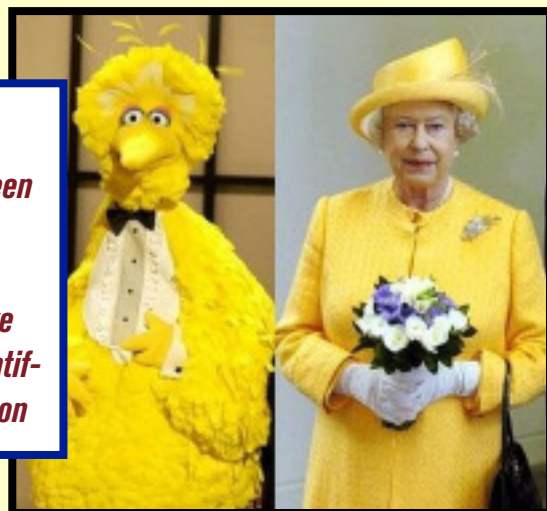
<http://tedxtalks.ted.com/video/TE DxDavis-Lloyd-Knox-A-Sample-S>

[http://fora.tv/2010/11/07/Wonderfest_2010_Do_We_Understand_the Universe](http://fora.tv/2010/11/07/Wonderfest_2010_Do_We_Understand_the_Universe)

WHAT'S UP

Doppelgängers...

Do you know what they are? Have you ever seen one? Has someone you know seen yours...or vice-versa? Your skills of imagination, knowledge and comparison will be challenged as we explore doppelgängers of the space and scientific communities. Be there or beware... by Moon



PRESIDENT'S CORNER

A Tale Of Two Star Parties

by Chris Ford

This month I will contrast two recent regional star parties, the Oregon Star Party held earlier this year between August 31st and September 4th, and Calstar held between September 29th and October 1st.

Each of these star parties has in my opinion a distinct character and to those who have never attended either, this short account will hopefully give

level of organization, the types of telescopes on display, the cross section of observers, the sound at night whether it is a low conversational hub-bub or the sound of crickets, the temperature range, food, the speakers, (if available) even the sanitary facilities, and always one "particularly distinguishing characteristic" that is uniquely specific to the location. All of these factors in combination give each star party its unique character.

The Oregon Star Party (OSP) is about as far away as it is possible to reach within a one-day drive from the Bay Area.

At a distance of around 530 miles each way, this is a

long 9-10 hour drive with breaks, but it is just possible to do in one day. When I attended in August, I left my home at 7.45 am in the morning, arriving at around 5.00 pm with several hours of daylight left to get setup and then spend a night observing. (Daytime is for sleeping) The OSP location, significantly East of Bend and Prineville is an extremely dark site, more so in this author's opinion than the GSSP or Calstar. There is only a small light dome from Bend barely visible, but otherwise it is totally dark from horizon to horizon and

an absolutely perfect site for deep sky observing.



Rows of closely spaced Dobsonian's and lots of red dusty soil!

The OSP is a very well organized and large star party that pulls in over 500 amateur astronomers up and down the West Coast. I met observers from as far away as southern California, a fair number from Washington and Utah, large numbers from Oregon, and even some attendees from the East Coast. In terms of its physical layout, the OSP is centered on a "main street" in which are located equipment vendors, food concessions, a shower truck, and a lecture tent. The OSP also offers satellite wireless internet so that though the site is very remote,



The "main street" of the OSP showing vendor tents.

you a flavor of each. The Golden State Star Party (GSSP) and Yosemite are of course two additional star parties that are well known to many MDAS members, but this month I will focus on the Oregon Star Party and Calstar as they are a little less familiar to some and provide a good contrast in both style and organization.

The distinct "character" of a star party can be defined as a series of objective and subjective factors such as the darkness of the sky, the physical layout, the



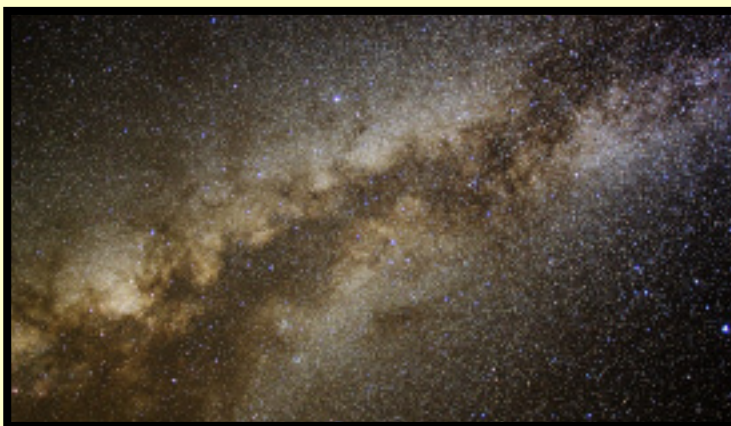
A Tom Osypowski 20" F/3.6 reflector just off the "main street" in red dust central.

President's Corner: A Tale of Two Star Parties. (Continued from the previous page)

one is not entirely disconnected from civilization. Observers tend to line up down a "Y" shaped road layout leading away from the main street and are fairly closely spaced as far as telescope and sleeping is concerned. Given this closeness, the OSP is quite an audible star party with a low conversational hubbub always present in the background when observing at night. The predominant telescope type is the large Dobsonian and if you want to check out very large telescopes (some over 40") or not even bring a telescope but look through others, then this is the event for you. There is a particularly strong ATM component to the OSP with a larger than typical representation of privately constructed telescopes, often of considerable sophistication. In fact there is an annual telescope walk-about event that showcases many of these creations.

The "particularly distinguishing characteristic" of the OSP in my opinion is the reddish soil that generates a fine red dust that after a few days gets everywhere, especially when a dust devil blows through the site. This should not discourage you though from what is an exceptional site for deep sky observing, and the altitude of the site generally presents consistent steady seeing. During the day, the OSP showcases amateur astronomy speakers of high calibre, this year including Steve Coe, Howard Knytych, Alvin Huey, and Mel

Bartels. The OSP is absolutely a wonderful place for an amateur astronomer to spend a few days and these pictures provide additional flavor:



The skies at the OSP are really dark! A simple DSLR exposure of the Milky Way, no light pollution here.

By way of contrast to the OSP, Calstar is a more informal, less populous, and "lower density" regional star party.

In fact it requires no registration and unlike the OSP is completely free excepting the admission fee to the park in which it is located. It is the ultra low key organizational aspect of this star party and its loose layout that is a big part of its charm. The location is within an easy 3-4 hour drive from the Bay Area in Monterey County near Lake Antonio, the nearest significant town being Paso Robles. Observers tend to set up... well anywhere, so the closely packed regimented rows of tents, RV's, and telescopes, characteristic of

many star parties are less common at Calstar. In fact the impression is less rows of tents, telescopes, and RV's along clearly marked avenues, than it is loose clusters of observers with large amounts of space in-between separated by clusters of trees. There is a slight glow from Paso Robles in the distance and the sky is not quite as dark as the OSP, but Calstar's convenience to the Bay Area and informal character makes up for it. The sky is still very dark with the dust lanes in the Milky Way easily visible, and this year despite some late clouds there were several good nights of observing.

Don't expect any food trucks, wireless internet, organized children's activities, or impressive



The "busy" central area of Calstar.

guest speaker list at Calstar either, you are on your own. In fact, if you want to set up in your own space and be completely separate from everyone else and yet still remain within the boundaries of an organized event, Calstar is just for you. The possibilities of isolation are very well suited to many observers and Calstar can be a very quiet star party unless you are in the very center where

President's Corner: A Tale of Two Star Parties. (Continued from the previous page)

observers tend to be somewhat closer to each other. In my own remote and quiet location, I enjoyed just lying on the ground and looking up at the sky and not hearing anything except crickets.



Lots of space to set up and do your own thing. Lots of trees for shade in the daytime also!

The "particularly distinguishing characteristic" of Calstar is in my opinion.... well space, as in lots of it. The location is very



A homemade 6", F/15 refractor!



MDAS member Alan Agrawl with his f/3.3 24" Starstructure.

spread out and split into dark enforced, casual, and late arrival areas. So large and spread out is the site in fact, that it can be quite disorienting finding your way around after dark outside of the central area. Last year I left my car in the daylight and could not find it again after dark and eventually had to resort to hitting the panic button of my car key remote while wandering around in the general vicinity. (Luckily I was parked out-

side the dark enforced area when I found it) This year I made sure I had a compass application loaded on my iPhone.

Calstar has a very different character to the OSP, one more suited to communing with the stars without distraction, but it

is no less worthwhile a star party and these pictures give some additional flavor as to its character. Both are recommended next year, try them!

<http://www.oregonstarparty.org/>

http://www.sfaa-astronomy.org/lib_code/frame_wrapper.php?eventwrapper:863

Chris Ford

Star Trek and Our View of The Universe

by Nathaniel Bates

I grew up with Star Trek. I can honestly say that I never knew a world without Star Trek.

I never knew a world without a diverse, multicultural crew on board a ship that had as its purpose the peaceful exploration of the Galaxy. I realize, however, that this is not the case for everyone. I am in my thirties, and I know that some of you do remember a time before the commanding Captain Kirk, the thoughtful Science Officer Spock, and the irascible Doctor McCoy. The science fiction you remember was every bit an opening to the imagination as Star Trek, your youth every bit a time of wonder and curiosity as was mine.

However, I believe that Star Trek was a milestone in the development of the scientific imagination in many respects that should be appreciated and noted. The show represented an awesome

shift in the nature of science fiction that bears some discussion.

Look back to the science fiction of the twenties and thirties and one finds a world of the imagination that was wondrous and awe-inspiring.

Flash Gordon is one particular example of a narrative from the thirties that excited the human



imagination. It was much like Star Trek in many ways. Both had handsome heroes (in the company of handsome women) who traveled to other planets. Both handsome heroes also encountered hostile aliens and defeated them. In both cases, bravery was the high ideal that the viewer could vicariously live by simply by reading a comic or watching a television show. Flash Gordon fought for freedom and defended the underdog just like Captain Kirk did. And, in both cases, a world of

troubles was left behind and a great escape in to adventure ensued.

However, note with Star Trek a key difference from earlier science fiction stories. The ideal of Star Trek was not simply one of escape and adventure. Star Trek also contained a message very different from much of earlier science fiction. Star Trek was a narrative about war and peace. The message of Star Trek was one of a readiness for war when necessary, but a willingness to embrace peace when possible. The United Federation of Planets was not established by humans waging war against aliens. Rather, the Federation was established by races all looking to live together in harmony. The enemies it encountered were not so much Klingons and Romulans, but the spirit of war and hatred itself. The greatest enemy of the Enterprise was not the alien as an Other, as a non-human, but the whole idea of xenophobia itself. Whereas with earlier science fiction the alien was often frightening simply because he was an alien, in Star Trek the Klingons were enemies because the Klingons were militaristic and not because they were from another planet.

The America of the original Star Trek was in a rapid period of radical social change.

Civil rights, the war in Viet Nam, and student activism were dividing the country. The idea of having an African American on board the deck of the Enterprise



Star Trek and Our View of The Universe *(Continued from the previous page)*

was revolutionary in a way that resonated with the discourse of the Sixties around inclusion.



Nichelle Nichols, the actress who played Uhura, once stated that before Star Trek she never would have assumed that African-Americans had a future in space. Previously, science fiction had been the preserve of white men who would leave the planet to conquer the Universe, much as nineteenth century explorers had tended to be white men. These science fiction heroes were colonizers who faced an alien Universe as an Other, and often carried with them an explicitly chauvinistic and imperialist message reflecting their time. Lieutenant Uhura's inclusion in the show represented a change in this dynamic that was radical in so many ways. Her presence on



the Bridge was accepted by her crewmates, and by the rest of America. We eventually became accustomed to seeing a diverse crew, and embraced it. By reflecting the changes in society, Star Trek also helped to shape them.

In many ways, Star Trek represented the hope of what idealists wanted America to become.

Really, it was an expression of what idealists wanted the world to become. The Enterprise was an expression of the Brotherhood of Man taken to the stars. War was no longer the



key draw as it was for viewers and readers of Flash Gordon. Rather, war was an unfortunate necessity while the key draw for the Enterprise was scientific curiosity. Spock the scientist was as much of a hero as Kirk the warrior. Doctor McCoy the life saver was also a draw. "Bones" McCoy may have been crusty, but all knew that he put human life first, before abstractions, before that blasted Vulcan logic that in

the actual reality of the Sixties seemed to be the justification for McNamara and other technocrats sending so many lives in to Viet Nam. Finally, the ship engineer was a congenial Scotsman, someone who was not simply a technician but a human being above all. So much of the enterprise exploring space was as much about humanity as it was about the stars.

William Shatner and Leonard Nimoy often downplayed their characters, insisting that they are not Kirk or that they are not Spock. I don't believe them fully. I think that actors and actresses bring with to their roles some aspects of themselves. Without Shatner, Kirk would have been a different person. Without Nimoy, Spock would have been acted differently. Without the complexity that George Takei brought to the character of Sulu, we never would have had the conflicted lieutenant



whose emotions were always deeper than his rank or place on the Bridge would suggest. One suspects that Takei himself was the force behind allowing Sulu to expand from simply being another face on deck. Finally, the supporting cast refused to simply be

nameless and faceless. In many cases, they forced themselves in to being complex characters in their own right. It is as if their characters were going to explore the Galaxy but also themselves, just as the America of the 1960's

Star Trek and Our View of The Universe *(Continued from the previous page)*

was going to begin to explore its own inward self without fear.

Gene Roddenberry had to face network censorship. A lot of times his message was seen as too radical, too oriented to the counter-culture, for viewers and advertisers to accept. However, Roddenberry managed to get explosive messages around cen-



ed and made his point. Then the series ran its course and went off the air. One suspects that it would have been over forever. Yet, its ability to stir thought and to involve its audience so succeeded that the fan base demanded that the series be brought back in reruns. Eventually, the fan base built and movies were made. New versions were made. A television show became a cultural phenomenon. What began as a vision of the future entered the ages and became timeless.

Later versions of Star Trek built on the original, but in my opinion none could ever quite capture the original.

The Next Generation came close. It came very close. In particular, it captured the moral dilemmas and philosophical quandaries of the original. Do we always follow the Prime Directive?

Is war ever justified?

Who decides the value of life?

And, yes, the most important question of all:

Do the needs of the many really outweigh the needs of the few?

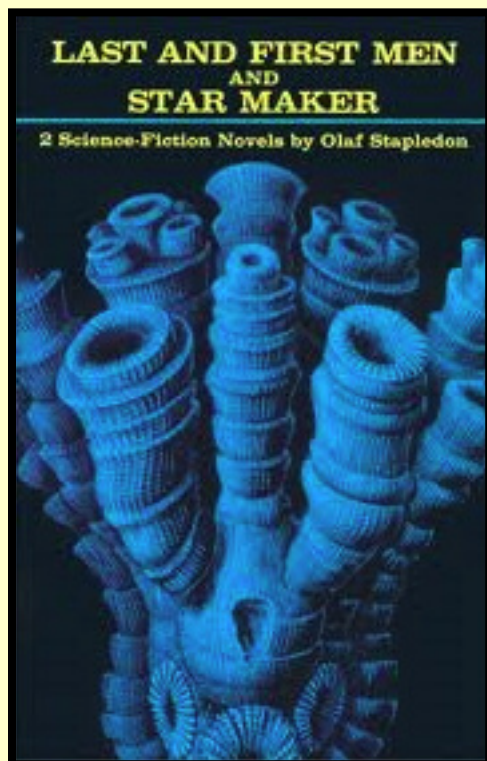
Do the needs of the few really outweigh the needs of the one?

it caused the viewer to reflect and be active moral agents in our own right. No one ever preached to us. If we were convinced, we convinced ourselves.

Science fiction was transformed forever by Star Trek.

I cannot say for sure, but my educated guess tells me that it was after Star Trek that Philosophical Science Fiction really took off.

Now, some will argue that Olaf Stapledon was an early pioneer of Philosophical Science Fiction, and indeed he was. He was one of the great writers of the philosophical science fiction genre. There were certainly others, including H. G. Wells. Where Star Trek differed was the degree to which philosophical science fiction was allowed to hit the screen. It not only hit the television screen, but also the movie screen. Since then, much of our science fiction has explored moral questions. It has reflected societal anxieties around freedom, civil liberties, the value of life, and the rights of individuals. Star Trek truly did boldly go where no one had gone before.



sors by projecting them well in to the future. Messages about racism, war, and sexuality were allowed to be made because they were made in the future, about a future time. Eventually, Roddenberry succeed-

Star Trek never fully answered these questions. Instead, it allowed these questions to play themselves out in our minds, demanding of us that we think and meditate. Its success was that

Mount Diablo Astronomical Society Event Calendar–October 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27	28	29	30	1 Observatory Maintenance Sunset: 6:53 PM
2 7:00 PM Sports Basement Sidewalk	3 7:00 PM Indian Valley Stargazing	4 	5 6:00 PM Pittsburg Library	6 Int'l Observe the Moon	7 Sunset: 6:42 PM	8
9 Columbus Day 7:30 PM Board Meeting	10	11 	12	13 6:30 PM Hidden Hills Elementary S	14 Sunset: 6:32 PM	15
16	17 Hillview Junior High Star	18	19 6:00 PM Lafayette Stargazing	20 	21 6:00 PM Astronomy: OUR GALAXY	22 Sunset: 6:23 PM
9:30 AM Toolkit screening 23	24 7:15 PM GenMig: BB Cosmic Ripples	25 	26	27	28 Society Observing	29 Sunset: 6:14 PM

Your Help Would Be Greatly Appreciated

Our association needs a few members to come at 6:30 p.m. before our monthly meeting which starts at 7:15 p.m. to help in setting up the chairs and other elements needed to conduct the general meeting.

Similarly at the end of each meeting the chairs and tables have to be removed, the room has to be cleaned and the garbage emptied.

Thank you for your help.



Board Members & Address

President

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Moon Trask - metallicamoon@sbcglobal.net

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Mailing address:

MDAS

P.O. Box 4889

Walnut Creek, CA 94596

General Meetings:

Fourth Tuesday every month,
except on the third Tuesday

Refreshments and conversations
Meetings begin at 7:15pm.

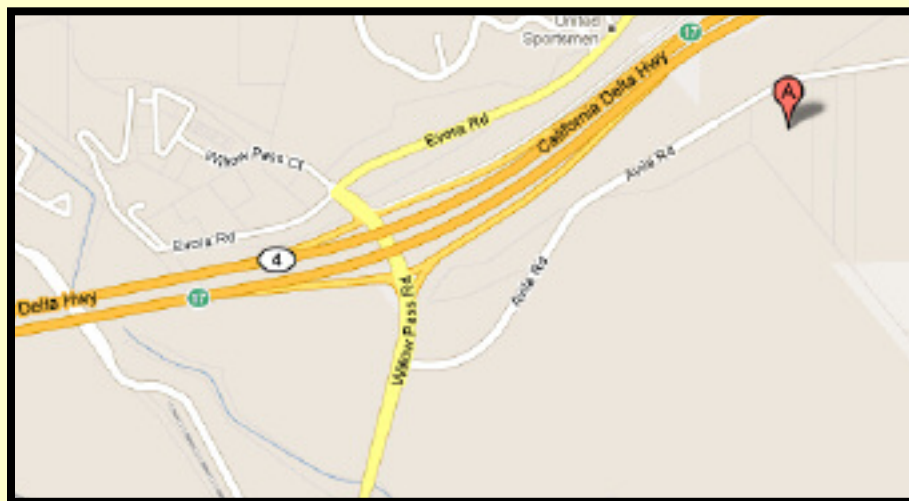
Where:

Concord Police Association

5060 Avila Road, top of the

Take Avila Road from Willow

Directions to facility:



Telescopes Needed

by Jim Head

Friday October 14 2011, 6:30 PM - 9:00 PM

Hidden Hills Elementary Stargazing, Hidden Hills Elementary, San Ramon, CA Setup 6 PM

More details: http://nightsky.jpl.nasa.gov/club/event-view.cfm?Event_ID=29506

Tuesday, October 18, 2011 6:30 PM - 9:00 PM

Hillview Junior High Stargazing, Hillview Junior High, Pittsburg, CA Setup 6 PM

More details: http://nightsky.jpl.nasa.gov/event-view.cfm?Event_ID=30082

Thursday October 20, 2011, 6:00 PM - 8:00 PM

Lafayette Library Stargazing, Lafayette Public Library, Lafayette, CA Setup 5 PM

More details: http://nightsky.jpl.nasa.gov/event-view.cfm?Event_ID=29807

Wednesday November 2, 2011, 6:30 PM - 8:00 PM

3rd Grade Starwatch, Ron Nunn Playground or Park, Brentwood, CA Setup 5:30 PM

More details: http://nightsky.jpl.nasa.gov/club/event-view.cfm?Event_ID=29843

Saturday November 5, 2011, 3:00 PM - 9:00 PM

Bay Area Science Festival at the Sports Basement, Sports Basement, Walnut Creek, CA Setup 2 PM

More details: http://nightsky.jpl.nasa.gov/event-view.cfm?Event_ID=29926